

CLAIMS

1. A sternum reinforcing device to be used after a sternotomy or a sternal fracture, which device comprises at least an elongated member (1; 10) apt to be used as a unit of a reinforcing group, which member (1; 10) is designed to be located on a surface portion of an anterior longitudinal lateral edge of a sternum and is provided with a first and a second connection parts (6, 7), said first connection part (6) of said elongated member (1; 10) being adapted to join with a second connection part (7) of a preceding elongated member of the reinforcing group along the longitudinal lateral edge of the sternum, said second connection part (7) of said elongated member being adapted to join with a first connection part (6) of a following elongated member of the group along the same longitudinal lateral edge of the sternum, said elongated member (1; 10) being further provided with a projecting portion (4) designed to be fitted in an intercostal space adjacent to the longitudinal lateral edge of the sternum.
2. The device according to claim 1, characterised in that the connection parts (6, 7) of said elongated member (1; 10) are apt to form a prismatic coupling with the corresponding connection parts of the respective preceding and following elongated member of the group.
3. The device according to claim 1 or 2, characterised in that the elongated member (1; 10) is made from a biocompatible, shaped and bent plate material.
4. The device according to any of claims 1 to 3, characterised in that said first connection part is a male arm (6) adapted to be fitted slidingly in a corresponding second connection part (7) of a preceding elongated member.
5. The device according to claim 4, wherein said male arm (6) has a rectangular flat cross-section profile.
6. The device according to any of claims 1 to 5, characterised in that said second connection part is a female arm (7) adapted to be fitted slidingly in a corresponding first connection part (6) of a following elongated member.
7. The device according to claim 6, wherein said female arm (7) has a hollow channel-shaped cross-section.
8. The device according to any of claims 1 to 7, characterised in that said projecting portion for the intercostal space is a body portion (4) of the elongated member (1; 10) extending between said connection parts (6, 7) and at right angles to them.
9. The device according to claim 8, wherein said body portion (4) is U-shaped having parallel free edges (2, 3), orthogonally bent outwards, to enclose between them a clamping means (15) of the elongated member to same sternum.
10. The device according to claim 9, characterised in that said clamping means consists of a stainless steel wire (15).
11. The device according to claim 9 or 10, characterised in that said free edges (2, 3) of the U-shaped projecting portion (4) extend from the projecting portion (4) in the form of legs (20, 30) which can be fitted in the intercostal space of the thorax of a patient,

laterally to the sternum, and bent in a mutually opposite direction, on the internal side of the thorax.

12. The device according to claim 11, characterised by comprising further a separated splint (12) provided with a multiplicity of slots (13) for the passage and the retaining of said legs (20, 30) before the legs (20, 30) being bent from the body portion (4) in a mutually opposite direction.

13. The device according to claim 12, characterised in that said splint (12) is provided, on one side thereof, with guiding notches (14) to accommodate said clamping means (15).

14. A method for reinforcing a sternum after a sternotomy or a sternal fracture, comprising the step of applying a reinforcing group made of a plurality of elongated members (1; 10), wherein each member (1; 10) is located on a surface portion of an anterior longitudinal lateral edge of the sternum and is provided with a first and a second connection parts (6, 7), said first connection part (6) of said elongated member (1; 10) joining with a second connection part (7) of a preceding elongated member of the reinforcing group along the longitudinal lateral edge of the sternum, said second connection part (7) of said elongated member joining with a first connection part (6) of a following elongated member of the group along the same longitudinal lateral edge of the sternum, said elongated member (1; 10) being further provided with a projecting portion (4) fitting in an intercostal space adjacent to the longitudinal lateral edge of the sternum.